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**ELSEVIER**  
**FULL-TEXT ARTICLE**

## Synthesis and DNA binding properties of dioxime-peptide nucleic acids.

**Mokhir A, Kramer R, Voloshin YZ, Varzatskii OA.**

Anorganisch-Chemisches Institut, Ruprecht-Karls-Universität Heidelberg,  
Im Neuenheimer Feld 270, 69120 Heidelberg, Germany.  
[andriy.mokhir@urz.uni-heidelberg.de](mailto:andriy.mokhir@urz.uni-heidelberg.de)

Peptide nucleic acids (PNAs) C- or N-modified with dioxime ligands were prepared by solid-phase synthesis using iron(II)-clathrochelates as protected dioxime building blocks. These PNA bind complementary DNA sequence specifically, though with much reduced affinity in comparison with nonmodified PNA. The dioxime-PNA conjugates bind Cu<sup>2+</sup> and Ni<sup>2+</sup> at microM concentration.

PMID: 15125961 [PubMed - indexed for MEDLINE]

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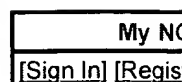
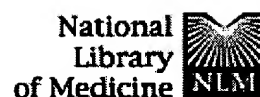
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## Synthesis and hybridization properties of an acyclic achiral phosphonate DNA analogue.

**Kehler J, Henriksen U, Vejbjerg H, Dahl O.**

Department of Chemistry, H. C. Orsted Institute, University of Copenhagen, Denmark.

Protected N-(2-hydroxyethyl)-N-(nucleobase-acetyl) aminomethanephosphonic<sup>++</sup> acid (6a-d) of all four DNA nucleobases have been prepared and oligomerized by solid-phase synthesis. Four DNA decamers containing 1-10 of these 'PPNA' monomers were prepared and evaluated by T<sub>m</sub> measurements (medium salt) for binding to their DNA and RNA complements. One central modification reduced the binding strongly (delta T<sub>m</sub> = -10 degrees C), but contiguous PPNA monomers gave smaller effects, and the all-PPNA decamer bound to RNA with a delta T<sub>m</sub> of -1.2 degrees C per modification. Thus PPNA oligomers are inferior DNA and RNA binders compared to the closely related and strongly binding PNA oligomers.

PMID: 9568285 [PubMed - indexed for MEDLINE]

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